

# Test Report

## Nº B24-14-AB-01E

### Test of degree of protection IP67

<b>TEST SAMPLE</b>	STAINLESS STEEL ENCLOSURES
<b>MODEL</b>	See part 1
<b>REQUESTED BY</b>	MANUFACTURAS METÁLICAS DEL VALLE, S.L.U.
<b>MANUFACTURER</b>	MANUFACTURAS METÁLICAS DEL VALLE, S.L.U. C/ Paso el Prao 6, Oyón (Alava)
<b>STANDARD</b>	IEC 62208:2011
<b>RECEPTION DATE</b>	19 <sup>th</sup> February 2014
<b>TEST DATE</b>	19 <sup>th</sup> February to 4 <sup>th</sup> March 2014
<b>ISSUE DATE</b>	9 <sup>th</sup> March 2014

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- \* The present report refers only and exclusively to the sample tested and at the moment and conditions in which the measurements were made
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## 1. IDENTIFICATION AND CHARACTERISTICS OF TEST SAMPLES

The test samples tested are the following:

GEO Boxes: MVCB909080/67; MVCB202012/67; MVCB252515/67 y MVCB404015/67

LUXOR Boxes: MVAB383015/67; MVAB705021/67 y MVAB101030/67 (This is tested only for IPX7)

**Note:** From the detailed study of each manufacturing range, TECNALIA has selected the most representative samples of those ranges. Therefore, the results obtained over these samples are considered applicable to all references that make up the range, which are included in the attached drawings.

## 2. TEST FACILITIES ADDRESS

The test IP6X has been performed at the installations of TECNALIA in Burceña-Barakaldo.

The test IPX7 has been performed at the installations of the applicant.

## 3. TEST PERFORMED. STANDARD

Verification of degree of protection **IP67** according to the standard IEC 62208:2011 “Enveloppes vides destinées aux ensembles d'appareillage à basse tension = Empty enclosures for low-voltage switchgear and controlgear assemblies. Règles générales = General requirements”

A calculation of uncertainties for all measurements carried out is available.

## 4. PROTECTION AGAINST ACCESS TO HAZARDOUS AREAS, RESISTANCE AGAINST INGRESS OF FOREIGN PARTICLES AND DETRIMENTAL ENTRY OF WATER

### 4.1. Protection against access to dangerous areas IP6X

In order to meet the requirements according to the first characteristic 6, a test gauge of 1 mm Ø applied with a force of 1 N ± 10% shall not penetrate into the enclosure.

Atmosphere air conditions: 16 °C – 48% HR – 1012 mbar.

**RESULT. CORRECT:** The test gauge does not penetrate into the enclosure.

#### 4.2. Protection against access of foreign particles IP6X

The test samples were placed successively inside a suitable test chamber containing a suspension of the required quantity ( $2 \text{ kg/m}^3$ ) of talcum powder (this powder must pass through a square-mesh screen of  $50 \text{ }\mu\text{m}$  wire diameter and  $75 \text{ }\mu\text{m}$  mesh size).

The tests was performed with sub-pressure  $< 20 \text{ mbar}$ .

The test time was 8 hours for each test sample.

Initial atmosphere air conditions:  $16 \text{ }^\circ\text{C}$  – 48% HR – 1012 mbar.

Final atmosphere air conditions:  $18 \text{ }^\circ\text{C}$  – 50% HR – 1013 mbar.

RESULT: **CORRECT**. No powder deposit was observed inside the enclosures after the test.

#### 4.3. Protection against ingress of water IPX7 (performed to all test simples simultaneously)

The test is made by completely immersing the test samples in water so that the following conditions are satisfied:

- a) The lowest point of sample with a height less than 850 mm is located 1000 mm below the surface.
- b) The highest point of sample with a height equal to or greater than 850 mm is located 150 mm below the surface of the water.
- c) The duration of the test is 30 min.
- d) The water temperature does not differ from that of the equipment by more than 5 K. However, a modified requirement may be specified in the relevant product standard if the tests are to be made when the equipment is energized and/or its parts in motion.

Atmosphere air conditions:  $17 \text{ }^\circ\text{C}$  – 50% HR – 1016 mbar.

Water temperature:  $15 \text{ }^\circ\text{C}$

Duration of the test: 30 min

RESULT. **CORRECT**. No water entry is observed inside the samples.

	A (alto)	B (ancho)	C (fondo)	Tornillos lado A	Tornillos lado B	Pernos placa
MVCB909080/67	90	90	80	2	0	2
MVCB149080/67	140	90	80	2	0	2
MVCB209080/67	200	90	80	2	0	2
MVCB269012/67	260	90	120	3	0	2
MVCB101612/67	100	160	120	2	0	2
MVCB161612/67	160	160	120	2	0	2
MVCB202012/67	200	200	120	2	0	2
MVCB202515/67	200	250	150	2	1	2
MVCB252515/67	250	250	150	2	1	2
MVCB203015/67	200	300	150	2	1	4
MVCB303015/67	300	300	150	3	1	4
MVCB304015/67	300	400	150	3	1	4
MVCB404015/67	400	400	150	3	1	4

N°	Nombre	Cantidad	Material	Espesor	Plegado	Plano
1	arandela plana ø6 DIN125	8				
2	perno M6x15	2				
3	perno M6x35	4				
4	torn M6x10 DIN9056	8				
5	Tuerca M6 DIN934	8				
6	cuerpo GEO IP67	1	AlSi304	120 mm	V2-gama	EB/67-01 a
7	tapa GEO IP67	1	AlSi304	120 mm	V2-gama	EB/67-02 a
8	placa GEO IP67	1	Galvanizado	2,00 mm		EB/67-03 a
9	junta GEO IP67	1	junta 12x7			EB/67-04 a
10	casquillo M6x15	8	ø10 AISI303			EB/67-05 a

Referencia: MVCB0000067

Acabados: - Inoxidable satinado - Acero pintado

Creación del documento

TOLERANCIA GENERAL DE MECANIZACIÓN según DIN 7168

FECHA: 10/02/2018

IBRIDADO: 10/02/2018

APROBADO: 10/02/2018

DESIGNACIÓN: Caja GEO IP67

FECHA: 10/02/2018

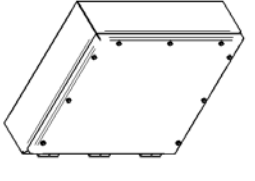
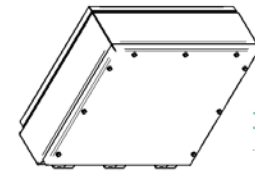
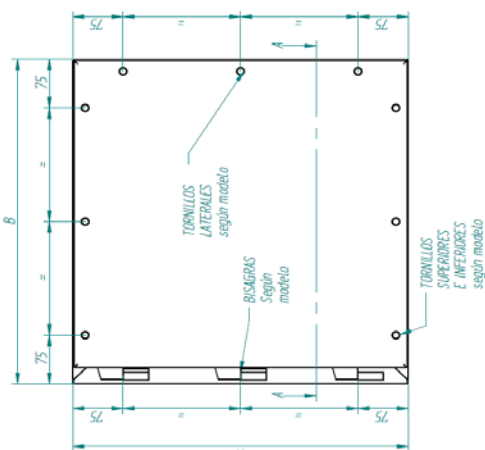
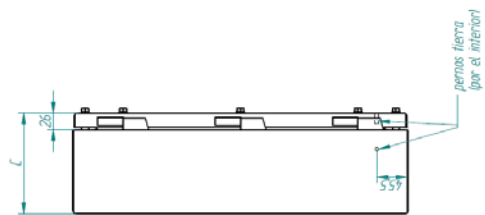
DMTINEZ A

FIRMA: REVISIÓN

MODIFICACIONES

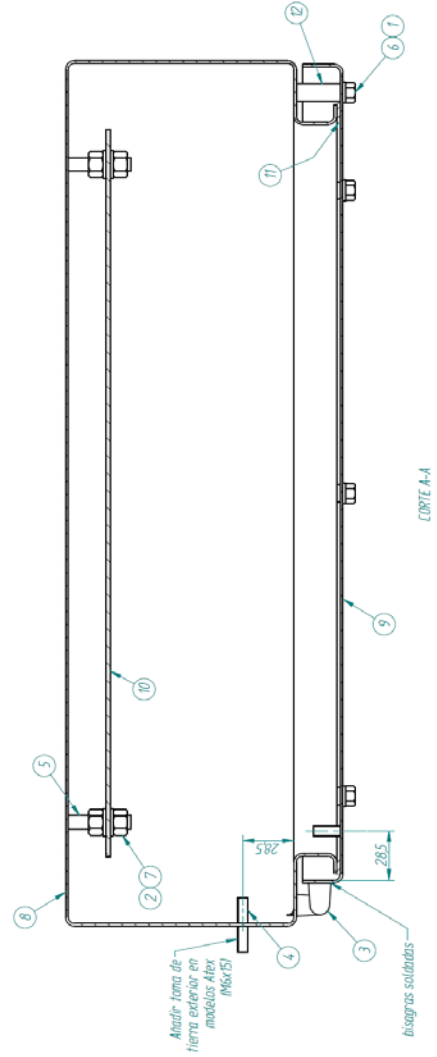
N° PLANO: EB/67-00 a

	A (alto)	B (ancho)	C (fondo)	Bisagras	Tomillos lateral	Tomillos sup. / inf.	Pernos Plega
MV/AB302015/67	300	200	155	2	2	0	4
MV/AB33015/67	380	300	155	2	2	1	4
MV/AB33021/67	380	300	210	2	2	1	4
MV/AB403815/67	600	380	155	3	3	2	6
MV/AB503821/67	600	380	210	3	3	2	6
MV/AB40421/67	400	400	210	2	2	2	4
MV/AB50421/67	500	400	210	3	3	2	6
MV/AB505021/67	500	500	210	3	3	3	8
MV/AB705021/67	700	500	210	3	3	3	8
MV/AB604021/67	600	500	210	3	3	3	8
MV/AB606021/67	600	600	210	3	3	3	8
MV/AB606030/67	600	600	300	3	3	3	8
MV/AB806030/67	800	600	300	4	4	4	8
MV/AB808030/67	800	800	300	4	4	4	8
MV/AB120030/67	1200	800	300	5	5	4	8
MV/AB101030/67	1000	1000	300	4	4	4	8
MV/AB121030/67	1200	1000	300	5	5	4	8
MV/AB121230/67	1200	1200	300	5	5	5	8



acción dual arcos  
puerta frontal y trasera

Nº	Título	Cantidad	Material	Espec. acabado	Plegado	Plano
1	carroleta plana de DIN25	9				
2	carroleta plana de DIN25	8				
3	Diagona ETKA 1079-16-PH	3				
4	perno M6x15	2				
5	perno M8x35	4				
6	perno hexagonal M6x10 DIN933	9				
7	Tuerca M6 DIN934	8				
8	Cuerpo LUOR P57	1	AS304	150 mm	Y6 + goma	AB67-01 a
9	puerta LUOR P57	1	AS304	150 mm	Y6 + goma	AB67-02 a
10	puerta LUOR P67	1	aluminado	250 mm	Y6	AB67-05 a
11	puerta LUOR P67	1	jarra 12,7			AB67-03 a
12	carroleta M6x25	9	o80 AS203			AB67-04 a



Referencia	MATERIA	TIPO	ESPEC.
MATERIA	TIPO	ESPEC.	ESPEC.
ESPEC.	ESPEC.	ESPEC.	ESPEC.
RESUMEN			
Armario Luxor puerta sencilla IP67			
Nº PLANO			
AB67-09 a			

TOLENCIA GENERAL DE MECANICAL según DIN 7168	FECHA	REVISIÓN	MODIFICACIONES
Imprimido	FECHA	REVISIÓN	MODIFICACIONES
Imprimido	FECHA	REVISIÓN	MODIFICACIONES
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